

***High Energy Density Plasmas/IFE  
News and Status***

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## ***OFES HEDP Program***

	FY 06	FY 07	FY 08
Heavy Ion Beam	9.3M	8.03M	8.2M
Fast Ignition	4.3M	3.04M	3.15M
Magnetized HED plasmas	2M	0.87M	0.95M
HED ICC	3.74M	3.53M	3.73M
Total	19.34M	15.47M	16.03M

## ***What is New?***

- The Interagency Task Force on HEDP has been in session since April 2006
- Interagency Task Force will be issuing its Report shortly (estimated by 3/31/07)
- Principal finding of the Task Force: **Federal stewardship of high energy density laboratory plasma physics (HEDLP) needs to be improved**
- OFES and NNSA ICF Office are establishing a joint program in High Energy Density Laboratory Plasmas (HEDLP) to address this issue
- Discussion on the program and management plan for the joint program is in progress

**PRE-DECISIONAL**

***The OFES-NNSA Joint Program in HEDLP provides stewardship for the entire field of HEDLP***

- The HEDLP is a manifold spanned by the Subject Areas and the Methods (Tools) of producing the HED Plasmas
- Advance the fundamental understanding and predictability of high energy density plasmas

	Subject Areas	Laser-Driven	Beam driven	Pulsed-power driven
1	Transport of particles and energy (including radiative) in dense plasmas	x	x	x
2	Laser-plasma, beam-plasma and wave-particle interactions	x	x	x
3	Warm dense matter	x	x	x
4	Hot dense matter	x	x	x
5	Magnetized HED plasmas	x	x	x
6	Strongly coupled plasmas	x	x	x
7	Diagnostics	x	x	x

## ***Current FES Program in HEDP***

- The FES program in HEDP seeks to provide a balanced stewardship of HED science relevant to energy applications
  - Laser-driven: fast ignition inertial fusion
  - Particle-beam driven: heavy ion beam driven WDM and fusion
  - Pulsed-power driven: plasma jets and dense plasmas in ultrahigh B field for applications including magneto-inertial fusion (magnetized HEDP).
- Supports the PART Measure for FES in HEDP:
  - Progress toward developing the fundamental understanding and predictability of high energy density plasmas relevant to potential energy applications.
- Supports the SC 20-year Strategic Plan:
  - 2009 Evaluate the feasibility of potential drivers, including heavy ion beams, dense plasma beams, and lasers for HEDP and IFE.
  - 2015 Determine the physics limits that constrain the use of IFE drivers in key integrated experiments needed to resolve the scientific issues for IFE and high-energy density physics.

## ***Presentations***

- Magnetized HEDLP (Glen Wurden – part of the ICC session - Done)
- Heavy Ion Beam HEDLP (Grant Logan)
- Fast Ignition HEDLP (Mike Campbell)